AP 10991

Listing of Patent Claims:

1.-10. Canceled

11. (Currently amended) A method of determining a differential pressure of a fluid by utilizing an electromagnetically drivable actuator (4) for pressure measurement, which actuator comprises an electromagnetic arrangement, in which a mechanical actuating element is movable by means of actuation of an exciter coil, and a valve actuating device for opening and closing the actuator, the method comprising the following steps:

determining at least one characteristic quantity included in the following groups: individual parameters, characteristic curves, and characteristic fields; and

determining a current, under consideration of at least one of these quantities, to position the valve actuating device,

exerting a mechanical force with the actuating element for opening and/or closing the actuator on the valve actuating device (1),

controlling the position of the valve actuating device or the magnetic force by means of an electric control circuit, ~~and~~

measuring the hydraulic force acting on the valve actuating device, and

calculating the differential pressure from the hydraulic force.

12. (Previously presented) The method as claimed in claim 11,

wherein the hydraulic force acting on the valve actuating device is measured electrically by measuring the magnetic force that acts on the actuating element,

13. (Previously presented) The method as claimed in claim 12,

wherein the magnetic force is determined from magnetic flux.

14. (Previously presented) The method as claimed in claim 11,

including the step of opening or closing a passage between the closing element and a valve seat (3) by means of a resetting element (2) when the exciter coil is not

excited.

15. (Canceled)

16. (Currently amended) The method as claimed in claim [[15]] 11, wherein the at least one characteristic quantity is determined by a calibration routine measuring the actuator in atmospheric pressure.

17. (Previously presented) The method as claimed in claim 16, wherein the calibration routine is performed in the completely opened and/or completely closed position of the actuator.

18. (Currently amended) The method as claimed in claim [[15]] 11, wherein, for the determination of the at least one characteristic quantity, at least one of the following characteristics of the actuator is determined: opening travel, spring force F_{spring} , magnetic resistance of the actuator.

19. (Currently amended) The method as claimed in claim [[15]] 11, wherein the actuator is mounted in a system, the method taking into account general parameters KG_{gen} related to the system in addition to actuator-related parameters KG_{ind} which are established in a measuring routine.

20. (Currently amended) The method as claimed in claim [[15]] 11, wherein a current variation is applied to the exciter coil and the induced voltage is measured as a characteristic quantity.

21. (Canceled)